AMENDMENTS TO THE CLAIMS

1. **(Currently Amended)** A mixture of recombinant cells, each cell of which comprises:

(i) a ~~an expressible~~ recombinant gene encoding a heterologous orphan cell surface receptor ~~protein~~ whose signal transduction activity is modulated by interaction with an extracellular signal; and

(ii) a ~~an expressible~~ recombinant gene encoding a heterologous test ~~potential receptor effector~~ polypeptide, which is capable of being tested to determine if it reacts with said orphan cell surface receptor,

wherein collectively the mixture of cells expresses a variegated population of said test ~~receptor effector~~ polypeptides, and modulation of the signal transduction activity of the orphan cell surface receptor ~~protein~~ by one of said [[~~a~~]] heterologous test polypeptides that reacts with said orphan cell surface receptor will provide[[~~s~~]] a detectable signal.

2. **(Currently Amended)** A mixture of recombinant cells, each cell of which comprises:

(i) a heterologous orphan cell surface receptor ~~protein~~ whose signal transduction activity is modulated by interaction with an extracellular signal~~s~~;

(ii) a ~~an expressible~~ recombinant gene encoding a heterologous test ~~potential receptor effector~~ polypeptide, which is capable of being tested to determine if it reacts with said orphan cell surface receptor; and

(iii) a reporter gene construct containing a reporter gene in operative linkage with one or more transcriptional regulatory elements responsive to the signal transduction activity ~~acitivity~~ of the orphan cell surface receptor ~~protein~~,

wherein collectively the mixture of cells expresses a variegated population of test polypeptides.

3-4. **(Cancelled)**

5. **(Currently Amended)** A mixture of recombinant cells, each cell of which comprises:

(i) ~~a~~ an orphan cell surface receptor ~~protein~~ whose signal transduction activity is modulated by interaction with an extracellular signal~~s~~;

(ii) a ~~an expressible~~ recombinant gene encoding a heterologous test ~~potential receptor effector~~ polypeptide, which is capable of being tested to determine if it reacts with said orphan cell surface receptor, and includes a signal sequence for secretion; and

(iii) a reporter gene construct containing a reporter gene in operative linkage with one or more transcriptional regulatory elements responsive to the signal transduction activity ~~acitivity~~ of the orphan cell surface receptor ~~protein~~,

wherein collectively the mixture of cells expresses a variegated population of test polypeptides.

6-7. **(Cancelled)**

8. **(Currently Amended)** A mixture of recombinant yeast cells, each cell of which comprises:

(i) ~~a~~ an orphan cell surface receptor ~~protein~~ whose signal transduction activity is modulated by interaction with an extracellular signal; and

(ii) a ~~an expressible~~ recombinant gene encoding a heterologous test ~~potential receptor effector~~ polypeptide including a signal sequence for secretion, which is capable of being tested to determine if it reacts with said orphan cell surface receptor,

wherein collectively the mixture of cells expresses a variegated population of test polypeptides ~~as receptor effectors~~, and modulation of the signal transduction activity of the orphan cell surface receptor ~~protein~~ by a test polypeptide provides a detectable signal.

9. **(Currently Amended)** The recombinant cells of claim 8, wherein each cell further comprises a reporter gene construct containing a reporter gene in operative linkage with one or more transcriptional regulatory elements responsive to the signal transduction activity ~~acitivity~~ of the orphan cell surface receptor ~~protein~~, expression of the reporter gene providing the detectable signal.

10. **(Currently Amended)** The recombinant cells of claim 8, wherein the reporter gene encodes a gene product that gives rise to a fluorescence detectable signal ~~selected from the group consisting of: color, fluorescence, luminescence, cell viability relief of a cell nutritional requirement, cell growth, and drug resistance~~.

11. **(Currently Amended)** The recombinant cells of claim 9, wherein the reporter gene encodes a beta-galactosidase gene product ~~selected from the group consisting of chloramphenicol acetyl transferase, beta-galactosidase and secreted alkaline phosphatase~~.

12-16. **(Cancelled)**

17. **(Currently Amended)** The recombinant cells of claim 8, wherein each cell further comprises a heterologous gene construct encoding the receptor ~~protein~~.

18-24. **(Cancelled)**

25. **(Original)** The recombinant cells of claim 8, wherein the variegated population of test polypeptides includes at least 10^3 different test polypeptides.

26. **(Currently Amended)** A recombinant yeast cell, comprising:

(i) a ~~an expressible~~ recombinant gene encoding a heterologous orphan cell surface receptor ~~protein~~ whose signal transduction activity is modulated by an extracellular signals~~;~~

(ii) a ~~an expressible~~ recombinant gene encoding a heterologous test ~~potential receptor effector~~ polypeptide ~~including a signal sequence for secretion~~; and

(iii) a reporter gene construct containing a reporter gene in operative linkage with one or more transcriptional regulatory elements responsive to the signal transduction activity ~~acitivity~~ of the orphan cell surface receptor ~~protein~~.

27. **(Currently Amended)** The recombinant cell of claim 26, wherein the reporter gene encodes a gene product that gives rise to a fluorescence detectable signal ~~selected from the group consisting of: color, fluorescence, luminescence, cell viability relief of a cell nutritional requirement, cell growth, and drug resistance~~.

28-35. **(Cancelled)**

36. **(Currently Amended)** The recombinant cell of claim 26 ~~35~~, which yeast cell ~~cells~~ is a *Saccharomyces* cell.

37. **(Currently Amended)** The recombinant cell of claim 35, which yeast cell ~~cells~~ is a *Schizosaccharomyces* cell.

38. **(Cancelled)**

39. **(Currently Amended)** A mixture of recombinant yeast cells, each cell of which comprises:

(i) a ~~an expressible~~ recombinant gene encoding a heterologous orphan cell surface receptor ~~protein~~ whose signal transduction activity is modulated by an extracellular signals~~;~~

(ii) a ~~an expressible~~ recombinant gene encoding a heterologous test ~~potential receptor effector~~ polypeptide, which is capable of being tested to determine if it reacts with said orphan cell surface receptor, and ~~including~~ includes a signal sequence for secretion; and

(iii) a reporter gene construct containing a reporter gene in operative linkage with one or more transcriptional regulatory elements responsive to the signal transduction activity ~~acitivity~~ of the orphan cell surface receptor ~~protein~~,

wherein collectively the mixture of cells expresses a variegated population of test polypeptides.

40-49. **(Cancelled)**

50. **(Currently Amended)** The recombinant cell of claim 39 ~~49~~, which yeast cell ~~cells~~ is a *Saccharomyces* cell.

51. **(Currently Amended)** The recombinant cell of claim 39 ~~49~~, which yeast cells is a *Schizosaccharomyces* cell.

52. **(Cancelled)**

53. **(Original)** The recombinant cells of claim 39, wherein the variegated population of test polypeptides includes at least 10^3 different test polypeptides.